

## ABSTRACT

An advanced telecommunications processor comprises a plurality of multithreaded processor cores each having a data cache and instruction cache. A data switch interconnect is coupled to each of the processor cores and configured to pass information among the processor cores. A messaging network is coupled to each of the processor cores and a plurality of communication ports. In one aspect of the invention, the data switch interconnect is coupled to each of the processor cores by its respective data cache, and the messaging network is coupled to each of the processor cores by its respective instruction cache. Advantages of the invention include the ability to provide high bandwidth communications between computer systems and memory in an efficient and cost-effective manner.